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PATENT APPLICATION

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, Colorado 80527-2400ATTORNEY DOCKET NO. 10006387-1IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Abel et al.

Confirmation No.: 2216

Application No.: 09/943,917

Examiner: Lett, Thomas J.

Filing Date: 08/31/2001

Group Art Unit: 2625

Title: A System And Method For Estimating Ink Usage Of A Print Job

Mail Stop Appeal Brief-Patents
Commissioner For Patents
PO Box 1450
Alexandria, VA 22313-1450TRANSMITTAL OF APPEAL BRIEFTransmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on 03/06/07.

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) \$520.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

☐ (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d)) for the total number of months checked below:☐ 1st Month
\$120☐ 2nd Month
\$460☐ 3rd Month
\$1050☐ 4th Month
\$1640☐ The extension fee has already been filed in this application.☒ (b) Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.Please charge to Deposit Account 08-2025 the sum of \$ 20*. At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees.☒ A duplicate copy of this transmittal letter is enclosed.* Apply \$500.00 fee from
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Respectfully submitted,

Abel et al.

By: [Signature]

Robert C. Sismilich

Attorney/Agent for Applicant(s)

Reg No.: 41,314Date: 5/3/07

Telephone: (941) 536-2432

Rev 10/06 (ApI/Brief)

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Respectfully submitted,

Abel et al.

By Robert C. Sismilich

Robert C. Sismilich

Attorney/Agent for Applicant(s)

Reg No.: 41,314

Date: 5/3/07

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Signature: JoAnn Sismilich

Rcv 10/06 (Ap:Brief)

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HP Docket No. 10006387-1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:09/943,917)
Conf. No.	:2216)
Appellant	:Abel et al.)
Filed	:08/31/2001)
Title	:A System And Method For Estimating Ink Usage Of A)
	Print Job)
)
TC / Art Unit	:2625)
Examiner	:Lett, Thomas J.)
)
Docket No.	:10006387-1)
Customer No.	:022879)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPELLANTS' APPEAL BRIEF

Sir:

Appellants are appealing from the Rejection of claims 1-14 and 21-38 in a Non-Final Office Action dated 12/08/2006. Prosecution was reopened following submission of Appellants' prior Appeal Brief. The Appeal is reinstated in accordance with MPEP § 1204.01.

I. REAL PARTY IN INTEREST

The real party in interest is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a

Page 1 of 33

HP Docket No. 10006387-1

Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holding, LLC.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to the real party in interest which will directly affect or be directly affected by, or have a bearing on, the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-14 and 21-38 are pending. All of claims 1-14 and 21-38 stand finally rejected. The Appellants appeal the final rejection of claims 1-14 and 21-38.

IV. STATUS OF AMENDMENTS

The most recent Office Action, dated 12/08/2006, reopening prosecution following submission of Appellants' prior Appeal Brief is a Non-Final Office Action. Accordingly, since the application is not under final rejection, no amendments subsequent to final rejection have been filed.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent claims 1, 10, 21, and 29 are under appeal. The claimed subject matter relates to the printing of print jobs, and more particularly to the determination of the sufficiency of the consumable resources, such as ink, of at least one printer to print the print job. Obtaining this information before the print job is printed advantageously avoids wasting print media and ink, as would occur if the print job were printed with inadequate visual quality due to the lack of sufficient consumables, thus requiring the resultant print output to

HP Docket No. 10006387-1

be discarded. It also advantageously allows the necessary amounts of consumables to be obtained and on-hand at the time the print job is printed.

Independent claim 29 recites a method for estimating consumables requirements for a print job. In one embodiment, the print job may be print job 304 (Fig. 3). Printer parameters that are indicative of resources of a predetermined printer 100 (Fig. 1) are provided. In some embodiments, the predetermined printer may be printer 302 (Fig. 3), or one of printers 322 (Fig. 3). In some embodiments, the printer parameters may include an available amount of consumables, such as the ink stored in printhead assemblies or cartridges 136 (Fig. 1) which is used to print the print job. The printer parameters may also or alternatively include ink cartridge ("pen") data 312 (Fig. 3). The print job 304 is originated at a first computer 202 (Fig. 3) at a first network node, and communicated to a second computer 212 (Fig. 3) at a second network node. At the second computer 212, the print job 304 is analyzed to determine print job parameters that affect a required amount of the consumables. In some embodiments, these print job parameters may be determined by a print job analyzer 310 (Fig. 3), a file data analyzer 332 (Fig. 3), or in part by both. Based on the print job parameters, the second computer 212 estimates the amount of the consumables that are required in order to print the print job 304. In some embodiments, the estimation may be performed by file data analyzer 332. Because the printhead temperature may affect ink usage, in some embodiments the estimating may include adjusting the required amount of the consumables based on the printhead temperature of the printer 100. Then, based on the printer parameters and the required amount of the consumables, a determination is made at the second computer 212 as to whether sufficient consumables exist to print the print job 304. In some embodiments, this determination may be performed by a supply analyzer 336 (Fig. 3). Subsequently, the determination is communicated from the second computer 212 to the first computer 202. In some embodiments, at least one alternative printer, such as at least one of printers 322, that has sufficient consumables to print the print job 304 may be identified at the second computer 212 and communicated to the first computer 202.

Independent claim 1 recites a method for estimating ink usage of a print job. In this embodiment, a computer peripheral device, which may be a printer 100, printer 302, or one of

IIP Docket No. 10006387-1

printers 322, connects to a host computer 212 having predefined information relating to the peripheral device. Then, before the print job 304 is performed, pricing and estimation of ink and image consumables for completing the print job 304 using a plurality of different printers, including the computer peripheral device, is offered.

Independent claim 21 recites an ink usage monitoring system for estimating ink usage of a print job. In this embodiment, the ink usage monitoring system includes a means for connecting a computer peripheral device, which may be a printer 100, a printer 302, or one of printers 322, to a host computer 212 having predefined information relating to the peripheral device. The system also includes a means for offering pricing and estimation of ink and image consumables for completing the print job using a plurality of different printers including the computer peripheral device before the print job 304 is performed. In some embodiments, the system may include means for determining printing parameters for choosing a print option that best fits budgetary and printing requirements of the print job 304. The structure corresponding to the connecting means is a digital internet workflow subsystem 340 (Fig. 3) and the Internet 208 (Figs. 2,3), or a communications link between the host 212 and the printers 322 of server 216 (Figs. 2,3). The structure corresponding to the offering means is one or more of the print job analyzer 310, pen data 312, file data analyzer 332, and supply analyzer 336. The structure corresponding to the determining means is a cost analyzer 334 (Fig. 3).

Independent claim 10 recites a method for analyzing ink usage for a printer. In this embodiment, a type of ink cartridge and ink reservoir system 136 are communicated to a host computer 212 as part of a print job 304 submission. Based on predefined printing requirements, the ink to be used in the print job 304 is estimated. The number of print swaths and pages that the ink cartridge 136 can complete, based on the ink available in the ink reservoir system, is then determined.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 29-30 and 34-37 have been rejected under 35 USC §102(e), as being

HP Docket No. 10006387-1

anticipated by U.S. patent 6,266,493 to Farrell et al. ("Farrell '493").

Claims 1-2, 6-9, 21-22, and 26-28 have been rejected under 35 USC §103(a), as being unpatentable over U.S. patent 5,383,129 to Farrell et al. ("Farrell '129") in view of U.S. patent 6,356,359 to Motamed ("Motamed").

Claims 10-14 have been rejected under 35 USC §103(a), as being unpatentable over Hitachi Koki Imaging Solutions, Inc. (Office World News; Oct. 2000; vol. 28., issue 10; pgs. 30-31) ("HiKIS") in view of U.S. patent 6,266,493 to Farrell et al. ("Farrell '493").

Claims 3-5 and 23-25 have been rejected under 35 USC §103(a), as being unpatentable over U.S. patent 5,383,129 to Farrell et al. ("Farrell '129") in view of U.S. patent 6,757,070 to Lin et al. ("Lin").

Claim 33 has been rejected under 35 USC §103(a), as being unpatentable over U.S. patent 6,266,493 to Farrell et al. ("Farrell '493") in view of Hitachi Koki Imaging Solutions, Inc. (Office World News; Oct. 2000; vol. 28., issue 10; pgs. 30-31) ("HiKIS").

Claims 31-32 have been rejected under 35 USC §103(a), as being unpatentable over U.S. patent 6,266,493 to Farrell et al. ("Farrell '493") in view of U.S. patent 6,580,524 to Weichmann et al. ("Weichmann").

Claim 38 has been rejected under 35 USC §103(a), as being unpatentable over U.S. patent 6,266,493 to Farrell et al. ("Farrell '493") in view of U.S. patent 6,356,359 to Motamed ("Motamed").

Claims 29-30 and 34-35 stand or fall together.

Claims 36-37 stand or fall together.

Claims 1-2, 6-9, 21-22, and 26-28 stand or fall together.

Claims 10-14 stand or fall together.

Claims 3-5 and 23-25 stand or fall together.

Claim 33 stands or falls alone.

Claim 31 stands or falls alone.

Claim 32 stands or falls alone.

Claim 38 stands or falls alone.

VII. ARGUMENT

A. Claims 29-30 and 34-35 were improperly rejected under 35 U.S.C. §102(e) as being unpatentable over U.S. Patent No. 6,266,493 to Farrell et al. ("Farrell '493").

As to a rejection under §102, "[a]nticipation is established only when a single prior art reference discloses expressly or under the principles of inherence, each and every element of the claimed invention." *RCA Corp. v. Applied Digital Data Systems, Inc.*, (1984, CAFC) 221 U.S.P.Q. 385. The standard for lack of novelty, that is for "anticipation," is one of strict identity. To anticipate a claim, a patent or a single prior art reference must contain all of the essential elements of the particular claims. *Schroeder v. Owens-Corning Fiberglass Corp.*, 514 F.2d 901, 185 U.S.P.Q. 723 (9th Cir. 1975); and *Cool-Fin Elecs. Corp. v. International Elec. Research Corp.*, 491 F.2d 660, 180 U.S.P.Q. 481 (9th Cir. 1974). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Appellants contend that claims 29-30 and 34-35 were improperly rejected because the single cited reference does not disclose all of the essential elements of the claims arranged as required by the claims and in as complete detail as in the claims.

1. The Farrell '493 reference does not disclose all the limitations of Appellants' independent claim 29 in that the limitations of "providing printer parameters indicative of resources of a predetermined printer including an available amount of consumables" and "making a determination at the second computer whether sufficient consumables exist to print the print job" is absent from the reference.

Independent claim 29 recites:

HP Docket No. 10006387-1

“29. A method for estimating consumables requirements for a print job, comprising: providing printer parameters indicative of resources of a predetermined printer including an available amount of consumables; originating the print job at a first computer at a first network node; communicating the print job to a second computer at a second network node; at the second computer, analyzing the print job to determine print job parameters that affect a required amount of the consumables; based on the print job parameters, estimating at the second computer the required amount of the consumables required to print the print job; based on the printer parameters and the required amount of the consumables, making a determination at the second computer whether sufficient consumables exist to print the print job; and communicating the determination from the second computer to the first computer.” (emphasis added)

The Farrell '493 reference is directed to a “printing machine that records information about resources expended to carry out a printing request. ... Subsequently, before carrying out another printing request, the printing machine uses the recorded information to make a prediction or estimate of resources required to carry out the printing request” (Abstract). The Office states that the Farrell '493 reference discloses the limitation recited in claim 29 of “based on the printer parameters and the required amount of the consumables, making a determination at the second computer whether sufficient consumables exist to print the print job” (Office Action, p.4; emphasis added). Appellants respectfully disagree.

In order to determine whether sufficient consumables exist to print the print job, two different types of information are required. First, the consumable resources (such as ink, toner, print media, etc.) that are required to print the print job must be determined. As recited in claim 29, the print job is analyzed at the second computer to determine print job parameters that affect a required amount of the consumables, and then, based on the print job parameters, the required amount of the consumables required to print the print job is estimated at the second computer. Second, the amount of the consumable resources that are available to print the print job must be ascertained. As recited in claim 29, printer parameters indicative of resources of a predetermined printer, including an available amount of consumables, are provided. Finally, determining whether or not sufficient consumable resources exist to print the print job requires determining whether the available amount of consumable resources

HP Docket No. 10006387-1

exceeds the required amount of consumable resources.

While the Farrell '493 reference may, arguendo, disclose estimating the consumable resources required to print the print job, it clearly does not disclose providing printer parameters indicative of resources including an available amount of consumables which are necessary for the consumable sufficiency. With regard to the limitation of providing such printer parameters, the Examiner states that "database 24 includes records 50 that contain data useful to estimate consumables required, col. 4, lines 5-17" (Office Action, p.3; emphasis added). The Farrell '493 reference discloses that an "estimation process 9 ... uses a record, selected by database reader 8, to estimate, or predict, consumable resources required to print a future job" (col. 4, lines 10-13). However, the Farrell '493 reference is silent as to ascertaining the available amount of consumables (for example, in a particular printer or printing system). Because the estimation process 9 of estimator 10 of the Farrell '493 reference does not know the available amount of consumables, it cannot make a determination as to whether sufficient consumables exist to print the print job.

In response to Appellants' arguments presented in the previous Appeal Brief, the Examiner argues that

"before carrying out another printing request, the printing machine uses the recorded information to make a prediction or estimate of resources required to carry out the printing request. The printing machine thus reduces uncertainty about whether there are enough resources to satisfy the next request, and alleviates the burden of maintaining excessive consumables in inventory, col. 6, lines 35-46. The printing is therefore using its use information to give an estimate of what additional resources it will need to produce a future print job taking into account what it already has in inventory" (Office Action, p.3; emphasis in original).

Appellants disagree with the Examiner's characterization. Nothing in the cited portion of the reference discloses that an available amount of consumables of a predetermined printer is provided, or that a determination is made at a second computer as to whether sufficient consumables exist to print the print job. Reducing uncertainty about resources required to print a print job is not the same as determining whether or not sufficient resources exist to print the print job. If uncertainty is reduced from a very high level to merely a high level, or even to a moderate level, one is still not able to determine whether sufficient

HP Docket No. 10006387-1

resources to print the print job exist.

In addition, the Farrell '493 discloses nothing in terms of how the use information reduces uncertainty about whether there are sufficient resources to satisfy the next print request. It could conceivably be nothing more than, when presented with an estimate that a large amount of consumable resources will be needed to print an upcoming print job, the user knows that it's been a long time since the ink supply has been replenished and that a lot of print jobs have been printed from the ink supply, and so it's time to order more ink into inventory in case the ink supply happens to run out while printing the large print job. The Examiner leaps to a conclusion, unsupported by the disclosure, that the system takes into account what it already has in inventory when estimating what additional resources will be needed to produce a future print job. Regardless, the Examiner's conclusion is different from the limitations recited in claim 29.

Accordingly, the novel features of the present invention are not anticipated by the Farrell '493 reference in that the above-discussed essential elements, arranged as required by the claims and recited in as complete detail as in the claim, are absent from the reference. Therefore, the rejection is improper at least for that reason and should be withdrawn.

B. Claims 36-37 were improperly rejected under 35 U.S.C. §102(e) as being unpatentable over U.S. Patent No. 6,266,493 to Farrell et al. ("Farrell '493").

1. The rejection of dependent claims 36-37 is improper for the same reasons that render the rejection of its base claim 29 improper.

"A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers." (35 U.S.C. §112, paragraph 4.)

Claims 36-37 depend from base claim 29, which was rejected under 102(e) based on the Farrell '493 reference. Appellants have presented heretofore the reasons why the rejection of base claim 29 is improper. Because the rejection of base claim 29 is improper, the rejection of its dependent claims 36-37 is also improper for at least the same reasons.

2. The Farrell '493 reference does not disclose all the limitations of

HP Docket No. 10006387-1

Appellants' dependent claims 36-37 in that the limitation of an "alternative printer" is absent from the references.

With regard to an alternative printer, claim 36 recites:

"36. The method of claim 29, comprising:
identifying at the second computer at least one alternative printer having sufficient consumables to print the print job, and communicating the identity of the at least one alternative printer to the first computer." (emphasis added)

With regard to alternative printers, claim 37 recites:

"37. The method of claim 36, comprising:
at the first computer, selecting one of the alternative printers and sending the print job from the first computer to the alternative printer." (emphasis added)

In rejecting claim 36, the Examiner states that

"Examiner notes the printers 2 in the system 1 of Farrell et al send data to the Estimator 10. Farrell discloses that Estimator 10 may be located at printing systems 2 as well as user interface 12, col. 2, lines 37-39. All of these locations are different nodes. Thus, Estimator 10 can send data to an alternative node." (Office Action, p.5).

Appellants disagree with the Examiner's assertion that estimator 10 may be located at printing systems 2. There is no such teaching in the cited reference to this effect. In Fig. 1, estimator 10 is clearly illustrated as a different element from printing systems 2. What the Farrell '493 reference teaches is merely that estimator 10 can be invoked by a user at one of the printing systems 2, via a terminal on printing system 2 (col. 2, lines 29-38).

However, even assuming arguendo that the Examiner's assertion is correct, such alleged operation fails to disclose all the limitations of claim 36. It is not pertinent whether the estimator 10 can be located at the various printing systems 2 or can send data to an alternative node, because there is no disclosure in the Farrell '493 reference that the estimator 10, or any other element, identifies an alternative printer (i.e. a printer different from the predetermined printer) on which to print the print job.

In addition, and for similar reasons as have been discussed heretofore with regard to claim 29, the reference does not disclose determining whether any printer has sufficient consumables to print the print job.

With regard to the rejection of claim 37, it follows that, if no alternative printer is identified, no alternative printer can be selected or have a print job sent to it, as recited in

HP Docket No. 10006387-1

claim 37.

Accordingly, the novel features of the present invention are not anticipated by the Farrell '493 reference in that the above-discussed essential elements, arranged as required by the claims and recited in as complete detail as in the claim, are absent from the reference. Therefore, the rejection is improper at least for that reason and should be withdrawn.

C. Claims 1-2, 6-9, 21-22, and 26-28 were improperly rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,383,129 to Farrell et al. ("Farrell '129") in view of U.S. Patent No. 6,356,359 to Motamed ("Motamed").

As to a rejection under §103(a), the U.S. Patent and Trademark Office ("USPTO") has the burden under §103 to establish a *prima facie* case of obviousness by showing some objective teaching in the prior art or generally available knowledge of one of ordinary skill in the art that would lead that individual to the claimed invention. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Manual of Patent Examining Procedure (MPEP) section 2143 discusses the requirements of a *prima facie* case for obviousness. That section provides as follows:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and reasonable expectation of success must be found in the prior art, and not based on applicant's disclosure.

Appellants contend that claims 1-2, 6-9, 21-22, and 26-28 were improperly rejected because (1) the applied references, alone or in combination, do not teach or suggest all of Appellants' claim limitations; and (2) there is no suggestion or motivation to modify or combine reference teachings. Such could be possible only in hindsight and in light of

HP Docket No. 10006387-1

Appellants' teachings.

1. The Farrell '129 and Motamed references, alone or in combination, do not teach or suggest all the limitations of Appellants' independent claims 1 and 21 in that the limitation of "offering pricing and estimation of ink and image consumables for completing the print job using a plurality of different printers including the computer peripheral device before the print job is printed" is absent from the references.

Independent claim 1 recites:

"1. A method for estimating ink usage of a print job, comprising:
connecting a computer peripheral device to a host computer having predefined information relating to the peripheral device; and
offering pricing and estimation of ink and image consumables for completing the print job using a plurality of different printers including the computer peripheral device, before the print job is performed." (emphasis added)

Independent claim 21 recites:

"21. An ink usage monitoring system for estimating ink usage of a print job, comprising:
means for connecting a computer peripheral device to a host computer having predefined information relating to the peripheral device; and
means for offering pricing and estimation of ink and image consumables for completing the print job using a plurality of different printers including the computer peripheral device, before the print job is performed." (emphasis added)

In rejecting claims 1 and 21, the Examiner states that:

"Farrell et al ('129) does not expressly disclose using a plurality of different printers including the computer peripheral device.

Motamed teach of the sending of a job 84 to a plurality of printers and estimation of consumable usage prior to printing, see at least col. 5, lines 29-31." (Office Action, p.6-7; emphasis in original).

While Appellants agree with the Examiner's admission that the Farrell '129 reference does not disclose this limitation, Appellants disagree with the Examiner's contention that the combination of the Farrell '129 reference and the Motamed reference teach or suggest at least the limitation of offering pricing and estimation of ink and image consumables for completing the print job using a plurality of different printers including the computer peripheral device,

HP Docket No. 10006387-1

before the print job is performed, as recited in claims 1 and 21.

Although the Motamed reference does disclose the existence of a plurality of printers 90a,90b,90n (Figs. 10-11), it does not disclose that pricing and estimation of consumables for completing the print job using the plurality of printers is offered before the print job is performed. In Appellants' invention, by offering pricing and consumables estimation for a plurality of printers before the print job is performed, the user can advantageously "compare the requirements of producing images on one system with that of another or a plurality of other systems" (specification, p.7, lines 13-15). In doing so, the user can select the best of a variety of choices of printers "before proceeding with a print job" (specification, p.8, lines 28-29). He is also "apprised ahead of time of the cost of the print job 304, so that an alternative can be selected if desired" (specification, p.8, lines 31-32).

The plurality of printers 90a,90b,90n, in contrast, are used in a different manner. The user is never offered pricing and estimation of consumables for completing the print job using the plurality of printers 90a,90b,90n. In addition, the user is never offered pricing and estimation of consumables for completing the print job before the print job is performed. As understood with reference to Fig. 9 of the Motamed reference,

"When a user decides to send the image file to be printed, the user enters a print command to the client server 72 ... The image file 74 is sent to a printer controller 86. ... When the image files 74 are received by the printer controller 86, the printer controller 86 translates 64 the image files from the first color space format to a second color space format, which is then sent to a printer 90. ... The printer controller 86 also produces a reduced resolution image file 50, of an image to be rendered by a printer 30. The reduced resolution thumbnail 50 can either be produced by the printer controller 86, or by the client server 72. ... The reduced resolution thumbnail 50 is typically defined in an RGB color space, while the print engine toners are typically defined in a CMYK color space. The toner usage estimation system 70 uses an algorithm to translate the RGB thumbnail bit map 50 into a set of estimated usage of C, M, Y, and K toner 40. The toner usage estimation system 70 shown in FIG. 9 uses the reduced resolution bit map 50 provided by the print controller 86 to estimate the use of one or more toners to define an image 12 on a substrate 16. This analysis constitutes an algorithmic estimation of the amount of toner necessary to print a given page 12, 16. The estimate of toner usage can be performed by either the printer controller 86 or the client server 72." (col. 4, line 31 – col. 5, line 8; emphasis added)

Thus the Motamed reference discloses that the cost of consumables is estimated while, or possibly even after the print job is printed; not before the print job is printed, as

HP Docket No. 10006387-1

required by claims 1 and 21. This is because the focus of the Motamed reference appears to be cost accounting for print jobs that have been performed, so that the different departments from which the print jobs originated can be billed for consumable usage more accurately than merely by using an aggregate cost basis of 5% toner coverage per page (col. 5, lines 20-28; see also col. 1, lines 4-17). This is completely different from the invention of Appellants' claims 1 and 21, in which the pricing and consumable usage estimates are offered for a plurality of printers before a print job is performed, which allows the user to select the one of the printers that best suits his price/performance requirements.

It is further noted that, while Figs. 10 and 11 of the Motamed reference illustrate the plurality of printers 90a,90b,90n, there is no teaching or suggestion that the toner usage estimation system 70 offers pricing and estimation of image consumables for completing the print job using a plurality of different printers including the computer peripheral device, or before the print job is performed, as is required by claims 1 and 21. Fig. 10 merely discloses that the reduced resolution bit maps 50 generated by different printer controllers 86a,86b,86n are collected in server 72 (col. 5, lines 10-18). Fig. 11 merely discloses that the reduced resolution bit maps 50 generated by different printer controllers 86a,86b,86n are collected by the department accounting software 100 (col. 5, lines 19-30). There is no disclosure that pricing and estimation for a plurality of printers is ever offered for a single print job. Rather, the Motamed reference merely discloses that different print jobs may each be sent to a different one of the plurality of printers for printing, and for generation of the bit map that allows estimation of toner usage and subsequent departmental billing.

2. There is no suggestion or motivation to modify or combine reference teachings in that the Motamed reference teaches away from combining with the Farrell '129 reference because the combination would produce a seemingly inoperative device and thus destroy the purpose of the primary reference.

With regard to motivation, the Examiner contends that combining the Motamed reference with the Farrell '129 reference would improve the capability of estimation for a

HIP Docket No. 10006387-1

plurality of machines. This conclusory statement of generalized advantages is too vague and not specific enough to serve as a proper motivation for combining the references.

Furthermore, the Motamed reference teaches away from combining with the Farrell '129 reference. With regard to the proper combination of references, it has been held that:

"If references taken in combination would produce a 'seemingly inoperative device', we have held that such references teach away from the combination and thus cannot serve as predicates for a prima facie case of obviousness" *McGinley v. Franklin Sports Inc.*, 60 USPQ2d 1001, 101 (Fed. Cir. 2001).

Combining the Motamed reference with the Farrell '129 reference would produce an inoperative device. The Farrell '129 reference is directed to "a method of estimating cost of printing materials used to print a job on a printing apparatus" (Abstract). Because claims 1 and 21 recite that the pricing and estimation of consumables for completing the print job using the plurality of printers is offered before the print job is performed, the steps of the "Yes" branch of block 508 of the method of Fig. 10 of the Farrell '129 reference are relevant when evaluating prior art. However, for similar reasons as discussed heretofore, the estimation of the Motamed reference is not performed before the print job is printed, but while or after the print job is printed. Therefore, combining in the estimation method of the Motamed reference, which is only performed while or after the print job is printed, would destroy the ability of the Farrell '129 reference to estimate costs before the print job is printed.

Accordingly, the Motamed reference teaches away from combining with the Farrell '129 reference, and thus there is no suggestion or motivation to modify or combine reference teachings. Any motivation to combine must impermissibly use the Appellants' disclosure as a blueprint or in hindsight.

D. Claims 10-14 were improperly rejected under 35 U.S.C. §103(a) as being unpatentable over Hitachi Koki Imaging Solutions, Inc. (Office World News; Oct. 2000; vol. 28., issue 10; pgs. 30-31) ("HiKIS") in view of U.S. patent 6,266,493 to Farrell et al. ("Farrell '493").

HP Docket No. 10006387-1

Appellants contend that claims 10-14 were improperly rejected because (1) the applied references, alone or in combination, do not teach or suggest all of Appellants' claim limitations; and (2) there is no suggestion or motivation to modify or combine reference teachings. Such could be possible only in hindsight and in light of Appellants' teachings.

1. The cited references, alone or in combination, do not teach or suggest all the limitations of Appellants' independent claim 10 in that the limitations of "communicating a type of ink cartridge and ink reservoir system to a host computer as part of a print job submission", and "determining the number of print swaths and pages the ink cartridge can complete based on ink available in the ink reservoir system", are absent from the references.

Independent claim 10 recites:

"10. A method for analyzing ink usage for a printer, comprising:
communicating a type of ink cartridge and ink reservoir system to a host computer as part of a print job submission;
estimating the ink to be used in a print job based on predefined printing requirements;
and
determining the number of print swaths and pages the ink cartridge can complete based on ink available in the ink reservoir system." (emphasis added)

Appellants disagree with the Examiner's assertion that the HiKIS and Farrell '493 references, taken in combination, teach or suggest all the limitations of claim 1. More specifically, the cited references do not teach and suggest the limitation of "communicating a type of ink cartridge and ink reservoir system to a host computer as part of a print job submission".

With regard to this first limitation, the Examiner contends that "i-manage allows customers/users of a printing machine to check a printer's equipment including consumables such as an ink cartridge, para. 4" (Office Action, p.10). To whatever extent this may be true, however, there is no teaching or suggestion that such an equipment check is performed as part of a print job submission. Rather, it is performed using an i-manage software module supplied by Hitachi, which a module that "provides comprehensive remote device management to allow dealers and customers to check a copier/printer's status, including ...

HP Dockel No. 10006387-1

extensive usage statistics including page counts by media size and consumable usage” (HiKIS, para. 4). As such, the i-manage software module is a diagnostic and service tool. There is no disclosure of any aspect of i-manage that is associated with printing individual print jobs. Accordingly, to whatever extent the HiKIS reference teaches communicating a type of ink cartridge and ink reservoir system to a host computer, it does not teach that such communication is performed as part of a print job submission.

Furthermore, for similar reasons as explained heretofore with reference to claim 29, the Farrell ‘493 reference does not disclose communicating a type of ink cartridge and ink reservoir system to a host computer at all, much less as part of a print job submission.

In addition, the cited references do not teach and suggest the limitation of “determining the number of print swaths and pages the ink cartridge can complete based on ink available in the ink reservoir system”.

With regard to this second limitation, the Examiner admits that “HiKIS does not disclose ... determining the number of print swaths and pages the ink cartridge can complete based on ink available in the ink reservoir system” (Office Action, p.10). However, the Examiner contends that the Farrell ‘493 reference “teaches that the system can make a prediction/estimate of resources (ink and pages are resources) required to carry out a print request” (Office Action, p.10; emphasis added). To whatever extent, if any, that the Examiner’s contention is correct, the resources required to carry out a print request are different from the resources (i.e ink.) available in the ink reservoir system to carry out the print request. The resources available may be more or less than the resources required, and if the resources available are less than the resources required, the print request cannot be carried out without replenishing the resources. For similar reasons as discussed heretofore with regard to claim 29, the Farrell ‘493 reference does not disclose determining the number of print swaths and pages the ink cartridge can complete based on ink available in the ink reservoir system, as recited in claim 10.

Therefore, the features of the present invention are neither disclosed nor suggested by the HiKIS reference in combination with the Farrell ‘493 reference at least in that the combined references do not teach the limitations of “communicating a type of ink cartridge

HP Docket No. 10006387-1

and ink reservoir system to a host computer as part of a print job submission" and "determining the number of print swaths and pages the ink cartridge can complete based on ink available in the ink reservoir system"..

2. There is no suggestion or motivation to modify or combine reference teachings in that estimating the consumable quantities required to print a particular print job, as taught by the Farrell '493 reference, is unrelated to the monitoring function provided by the i-manage software of the HiKIS reference.

In addition, the Office has not established a *prima facie* case of obviousness at least because there is no suggestion or motivation to modify the reference or to combine reference teachings. The Office states that the motivation is "to estimate quantities prior to executing print jobs" (Office Action, p.10). Appellants respectfully believe that the stated motivation is merely a conclusory statement of generalized features and advantages which is too vague and not specific enough to ascertain a motivation for combining the references. As argued heretofore, the i-manage module of the HiKIS reference is not directed to estimation of the consumables needed for a particular print job, or even to individual print jobs at all. Rather, the i-manage module provides a mechanism for remote device monitoring and management of copiers and printers. For example, a user may monitor consumables usage via the i-manage module, and then place a sales request for more consumables through the i-manage module at the appropriate time.

The Farrell '493 reference does not aid in the objectives of the HiKIS reference. Also as argued heretofore with regard to claim 29, the Farrell' 493 reference is directed merely to estimating the amount of consumables required to print a print job; it does not disclose ascertaining the amount of consumables available on a particular printer to print the print job, or determining whether the available amount of consumables is sufficient to print the print job. No linkage between required consumables and available consumables is taught or suggested by the HiKIS and Farrell '493 references; such is taught only by Appellants' disclosure. Therefore, a valid suggestion or motivation to combine is absent from the cited

HP Docket No. 10006387-1

references. Any motivation to combine impermissibly uses Appellants' disclosure as a blueprint or in hindsight.

E. Claims 3-5 and 23-25 were improperly rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,383,129 to Farrell et al. ("Farrell '129") in view of U.S. patent 6,757,070 to Lin et al. ("Lin").

1. The rejection of dependent claims 3-5 and 23-25 is improper in that the limitation of "using a plurality of different printers including the computer peripheral device" is neither taught nor suggested by the Farrell '129 and Lin references.

In the rejection of claims 1 and 21 the Examiner admits that the limitation of "using a plurality of different printers including the computer peripheral device" is not disclosed by the Farrell '129 reference (Office Action, p.6).

Nowhere in the rejections of claims 3-5 or 23-25 does the Examiner contend that this limitation is taught or suggested by the Lin reference.

Therefore, the rejection of claims 3-5 and 23-25 is improper at least because this limitation is neither taught nor suggested by the cited references.

2. The rejection of dependent claims 3-5 and 23-25 is improper for the same reasons that render the rejection of their base claims 1 or 21 improper.

"A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers." (35 U.S.C. §112, paragraph 4.)

Claims 3-5 and 23-25 depend from one of base claim 1 or 21, which have been rejected under §103(a) based on the Farrell '129 and Motamed references. The Lin reference was not cited in the rejection of claims 1 or 21.

Appellants have presented heretofore the reasons why the rejection of base claims 1 and 21 is improper. Because the rejection of these base claims is improper, the rejection of their dependent claims 3-5 and 23-25 is also improper for at least the same reasons.

HP Docket No. 10006387-1

3. There is no suggestion or motivation to modify or combine reference teachings in that the Farrell '129 reference is not from the problem solving area of drivers, or alternatively the Farrell '129 does not require the teachings of the Lin reference in order to access a suitable driver.

The Examiner states that the Farrell '129 reference and the Lin reference are analogous art because they are from the similar problem solving area of "connecting remote drivers" or "obtaining driver information", and that the motivation for combining these references is "to access a suitable print driver" (Office Action, p.12-13). Appellants disagree. The Farrell '129 reference is not from the problem solving area of connecting remote drivers or obtaining driver information; in fact, there is no mention of drivers in the Farrell '129 reference at all. Rather, the Farrell '129 reference is from the problem solving area of "estimating cost of printing materials used to print a job on a printing apparatus" (Abstract). Even if, arguendo, the Farrell '129 reference may somehow be considered to inherently be directed to drivers because of the interactions that occur between controller 7 and printer 8 (Fig. 2) in printing a print job, the alleged motivation for combining the references provided by the Examiner is absent. Since the Farrell '129 reference discloses printing the print job, it would have to be inherently capable of accessing a suitable print driver without requiring combining in the teachings of the Lin reference. Furthermore, controller 7 and printer 8 are part of self-contained laser based printing system 2 (Fig. 1). As such, there would be no need for controller 7 to connect to a remote driver for printing on printer 8.

Thus the motivation stated by the Examiner is too broad and vague to serve as a basis for properly combining the references. Any motivation or suggestion to combine reference teachings impermissibly uses the Appellants' disclosure as a blueprint or in hindsight for the rejection.

HP Docket No. 10006387-1

F. Claim 33 was improperly rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,266,493 to Farrell et al. ("Farrell '493") in view of Hitachi Koki Imaging Solutions, Inc. (Office World News; Oct. 2000; vol. 28., issue 10; pgs. 30-31) ("HiKIS").

1. The rejection of dependent claim 33 is improper for the same reasons that render the rejection of its base claim 29 improper.

"A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers." (35 U.S.C. §112, paragraph 4.)

Claim 33 depends from base claim 29, which was rejected under 102(e) based solely on the Farrell '493 reference. The HiKIS reference was not cited in the rejection of claim 29.

Appellants have presented heretofore the reasons why the rejection of base claim 29 is improper. Because the rejection of base claim 29 is improper, the rejection of its dependent claim 33 is also improper for at least the same reasons.

G. Claim 31 was improperly rejected under 35 USC §103(a), as being unpatentable over U.S. patent 6,266,493 to Farrell et al. ("Farrell '493") in view of U.S. patent 6,580,524 to Weichmann et al. ("Weichmann").

1. The rejection of dependent claim 31 is improper for the same reasons that render the rejection of its base claim 29 improper.

"A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers." (35 U.S.C. §112, paragraph 4.)

Claim 31 depends from base claim 29, which was rejected under 102(e) based on the Farrell '493 reference. The Weichmann reference was not cited in the rejection of claim 29.

Appellants have presented heretofore the reasons why the rejection of base claim 29 is improper. Because the rejection of base claim 29 is improper, the rejection of its dependent claim 31 is also improper for at least the same reasons.

2. There is no suggestion or motivation to modify or combine reference

HP Docket No. 10006387-1

teachings in that combining in the teachings of the Weichmann reference does not aid in the resource estimation of the Farrell '493 reference, and that adjusting the estimate resources for temperature increases is not taught or suggested by either reference.

The Examiner states that the Farrell '493 reference and the Weichmann reference are analogous art "because they are from the similar problem solving area of printer management", and that the motivation for combining these references is "to adjust for temperature increases" (Office Action, p.14). Appellants disagree. Appellants contend that the alleged art area of "printer management" is too broad and vague to serve as a basis for allowing the references to be properly combined. The Weichmann reference is not directed to the estimation of consumables resources for a print job. Rather, it is directed to selection of an appropriate color profile used to RIP a print job for a particular printing machine (Figs. 1-3). Because the Weichmann reference does not aid in the resource estimation of the Farrell '493 reference, the references are not properly combinable.

In addition, the alleged motivation to adjust the estimation process for temperature increases impermissibly uses the Appellants' disclosure as a blueprint or in hindsight for the rejection. As just discussed, the Weichmann reference is not even directed to estimation of consumable resources, but rather to the selection of a particular color profile, from a group of color profiles, to be used to translate the data from one color space to another as part of the RIP process. To whatever extent, if any, that the selection of the color space may be based on temperature, there is no disclosure in the Weichmann reference that an estimate of consumable resources for a print job is based on printhead temperature. Because it is only in Appellants' disclosure that such a disclosure can be found, there is no suggestion or motivation to combine the teachings of the Farrell '493 and Weichmann references.

HP Docket No. 10006387-1

H. Claim 32 was improperly rejected under 35 USC §103(a), as being unpatentable over U.S. patent 6,266,493 to Farrell et al. ("Farrell '493") in view of U.S. patent 6,580,524 to Weichmann et al. ("Weichmann").

1. The rejection of dependent claim 32 is improper in that the limitation of "the estimating including adjusting the required amount of the consumables based on the printhead temperature" is neither taught nor suggested by the Farrell '493 and Weichmann references

With regard to printhead temperature, claim 32 recites:

"32. The method of claim 31, wherein the printhead temperature affects ink usage, the estimating including adjusting the required amount of the consumables based on the printhead temperature." (emphasis added)

The Examiner admits that the Farrell '493 reference does not disclose the limitation that "the estimating including adjusting the required amount of the consumables based on the printhead temperature" (Office Action, p.14). However, the Examiner contends that the Weichmann reference teaches this limitation. Appellants disagree. As discussed heretofore with regard to claim 31, the Weichmann reference is directed to the selection of an appropriate color profile, from a group of color profiles, usable to translate the data from one color space to another as part of the RIP process of a print job for a particular printing machine (Figs. 1-3). The Weichmann reference is not at all directed to the estimation of consumable resources. It necessarily follows, therefore, that since the Weichmann reference is not directed to estimation, it cannot teach that the estimation includes adjusting the required amount of the consumables based on the printhead temperature.

Therefore, the features of the present invention are neither disclosed nor suggested by the Farrell '493 reference in combination with the Weichmann reference in that the combined references do not teach or suggest this limitation.

2. The rejection of dependent claim 32 is improper for the same reasons that render the rejection of its base claim 29 and parent claim 31 improper.

"A claim in dependent form shall be construed to incorporate by reference all the

HP Docket No. 10006387-1

limitations of the claim to which it refers.” (35 U.S.C. §112, paragraph 4.)

Claim 31 depends from parent claim 31, and from base claim 29.

Appellants have presented heretofore the reasons why the rejections of base claim 29 and parent claim 31 are improper. Because the rejection of these claims is improper, the rejection of their dependent claim 32 is also improper for at least the same reasons.

1. Claim 38 was improperly rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,266,493 to Farrell et al. (“Farrell ‘493”) in view of U.S. patent 6,356,359 to Motamed (“Motamed”).

1. The rejection of dependent claim 38 is improper for the same reasons that render the rejection of its base claim 29 improper.

“A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.” (35 U.S.C. §112, paragraph 4.)

Claim 38 depends from base claim 29, which was rejected under 102(c) based on the Farrell ‘493 reference. The Motamed reference was not cited in the rejection of claim 29.

Appellants have presented heretofore the reasons why the rejection of base claim 29 is improper. Because the rejection of base claim 29 is improper, the rejection of its dependent claim 38 is also improper for at least the same reasons.

2. There is no suggestion or motivation to modify or combine reference teachings in that the stated motivation to improve the estimation capability of the Farrell ‘493 reference for a plurality of machines is not pertinent to the claimed invention.

The Examiner states that the motivation for combining the Farrell ‘493 and Motamed references is “to improve the capability of estimation for a plurality of machines” (Office Action, p.16). This alleged motivation has nothing to do with the subject matter of claim 38, which recites:

“38. The method of claim 29, comprising:
based on the print job parameters, estimating at the second computer a cost of the

HP Docker No. 10006387-1

consumables required to print the print job, and communicating the cost to the first computer”

Both the second computer and the first computer are recited in base claim 29, against which the Motamed reference has not been cited. Furthermore, it is believed that the element “plurality of machines” refers to printers, not computers, and neither base claim 29 nor claim 38 recite a plurality of printers. Therefore, the stated motivation is too vague and not specific enough to serve as a motivation for combining the references. In addition, the stated motivation impermissibly uses the Applicant’s disclosure as a blueprint or in hindsight for the rejection. Because there is no credible motivation or suggestion to combine provided by the Office, it is improper to combine the Motamed reference with the Farrell ‘493 reference.

VIII. CONCLUSION

Appellants contend that claims 29-30 and 34-37 were improperly rejected because the applied reference does not disclose all of Appellants’ claim limitations.

Appellants contend that claims 1-14, 21-28, 31-33, and 38 were improperly rejected because the applied references, alone or in combination, do not teach or suggest all of Appellants’ claim limitations, and there is no reasonable expectation of success in combining the references.

Each of these reasons alone distinguishes Appellants’ claims from the cited reference or references, and renders Appellants’ claims patentable in light of the cited reference or references.

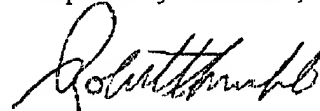
Overruling of the Examiner’s rejections of claims 1-14 and 21-38 is respectfully requested.

HP Docket No. 10006387-1

**AUTHORIZATION TO PAY AND PETITION
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If any charges or fees must be paid in connection with the foregoing communication (including but not limited to the payment of an extension fee or issue fees), or if any overpayment is to be refunded in connection with the above-identified application, any such charges or fees, or any such overpayment, may be respectively paid out of, or into, the Deposit Account No. 08-2025 of Hewlett-Packard Company. If any such payment also requires Petition or Extension Request, please construe this authorization to pay as the necessary Petition or Request which is required to accompany the payment.

Respectfully submitted,



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HP Docket No. 10006387-1

IX. CLAIMS APPENDIX

1. A method for estimating ink usage of a print job, comprising:
connecting a computer peripheral device to a host computer having predefined information relating to the peripheral device; and
offering pricing and estimation of ink and image consumables for completing the print job using a plurality of different printers including the computer peripheral device, before the print job is performed.
2. The method of claim 1, wherein the host computer is linked to a generic printer driver located on the host computer.
3. The method of claim 2, wherein the host computer is linked to a remote printer driver in a server system.
4. The method of claim 3, wherein the server supplies information pertaining to a number of instrumented drivers and printers to the host computer.
5. The method of claim 3, wherein the remote server is linked to the host computer via at least one of the Internet or a local intranet.
6. The method of claim 1, further comprising determining printing parameters for choosing a print option that best fits budgetary and printing requirements of the print job.
7. The method of claim 6, wherein the printing parameters includes at least one of print quantity, print quality, print type and paper type.
8. The method of claim 6, wherein the printing parameters are ascertained by a remote

HP Docker No. 10006387-1

printer driver and forwarded to a server.

9. The method of claim 8, wherein the printing parameters are incorporated by the server in data files to be used by various combinations of instrumented drivers and printers located on the server and shared by other printers connected to the server.

10. A method for analyzing ink usage for a printer, comprising:
communicating a type of ink cartridge and ink reservoir system to a host computer as part of a print job submission;
estimating the ink to be used in a print job based on predefined printing requirements;
and
determining the number of print swaths and pages the ink cartridge can complete based on ink available in the ink reservoir system.

11. The method of claim 10, further comprising relaying to the determined information to a user.

12. The method of claim 11, further comprising providing the user with a plurality of options, including allowing the print job to proceed, choosing an alternative printing system, and ordering ink consumables for the printer.

13. The method of claim 12, further comprising offering the user upgrade options, including ordering a generic stand alone printer driver and a server printer driver.

14. The method of claim 11, further comprising providing the user with a hyperlink via the Internet to a supplier of the printer for automatic ordering of the ink consumables.

21. An ink usage monitoring system for estimating ink usage of a print job, comprising:

HP Docket No. 10006387-1

means for connecting a computer peripheral device to a host computer having predefined information relating to the peripheral device; and

means for offering pricing and estimation of ink and image consumables for completing the print job using a plurality of different printers including the computer peripheral device, before the print job is performed.

22. The ink usage monitoring system of claim 21, wherein the host computer is linked to a generic printer driver located on the host computer.

23. The ink usage monitoring system of claim 22, wherein the host computer is linked to a remote printer driver in a server system.

24. The ink usage monitoring system of claim 23, wherein the server supplies information pertaining to a number of instrumented drivers and printers to the host computer.

25. The ink usage monitoring system of claim 23, wherein the remote server is linked to the host computer via at least one of the Internet or a local intranet.

26. The ink usage monitoring system of claim 21, further comprising means for determining printing parameters for choosing a print option that best fits budgetary and printing requirements of the print job.

27. The method of claim 1, comprising:
selecting one of the plurality of different printers and sending the print job to the selected printer.

28. The method of claim 1, wherein the peripheral device and at least some others of the plurality of different printers are located at different network nodes.

HP Docket No. 10006387-1

29. A method for estimating consumables requirements for a print job, comprising:
providing printer parameters indicative of resources of a predetermined printer
including an available amount of consumables;
originating the print job at a first computer at a first network node;
communicating the print job to a second computer at a second network node;
at the second computer, analyzing the print job to determine print job parameters that
affect a required amount of the consumables;
based on the print job parameters, estimating at the second computer the required
amount of the consumables required to print the print job;
based on the printer parameters and the required amount of the consumables, making
a determination at the second computer whether sufficient consumables exist to print the print
job; and
communicating the determination from the second computer to the first computer.
30. The method of claim 29, wherein the printer parameters are indicative of an ink
type, and an ink cartridge or ink reservoir type installed in the predetermined printer.
31. The method of claim 30, wherein the printer parameters are further indicative of a
printhead temperature of the predetermined printer.
32. The method of claim 31, wherein the printhead temperature affects ink usage, the
estimating including adjusting the required amount of the consumables based on the printhead
temperature.
33. The method of claim 29, wherein the printer parameters include an identification
number indicative of a particular consumable item, the identification number queryable to
determine if the particular consumable item is replaced.
34. The method of claim 29, wherein the print job parameters are indicative of an ink

HP Docket No. 10006387-1

type, a print media type, a number of pages to be printed, and a print quality.

35. The method of claim 29, comprising:

sending the print job from the first computer to the predetermined printer.

36. The method of claim 29, comprising:

identifying at the second computer at least one alternative printer having sufficient consumables to print the print job, and communicating the identity of the at least one alternative printer to the first computer.

37. The method of claim 36, comprising:

at the first computer, selecting one of the alternative printers and sending the print job from the first computer to the alternative printer.

38. The method of claim 29, comprising:

based on the print job parameters, estimating at the second computer a cost of the consumables required to print the print job, and communicating the cost to the first computer.

HP Docket No. 10006387-1

X. EVIDENCE APPENDIX

None

HP Docket No. 10006387-1

XI. RELATED PROCEEDINGS APPENDIX

None